

WE CLAIM:

Subpart 1.

1. A heat shrinkable film comprising a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms, said copolymer having a density of at least about 0.90 g/cc.

2. A heat shrinkable film as set forth in claim 1, wherein said single site catalyzed copolymer is blended with another thermoplastic homopolymer or copolymer.

3. A heat shrinkable film as set forth in claim 2, wherein said other thermoplastic homopolymer or copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms.

4. A heat shrinkable film as set forth in claim 3 wherein said heterogeneous copolymer has a density below about 0.90 g/cc.

5. A heat shrinkable film as set forth in claim 3 wherein said heterogeneous copolymer has a density above about 0.90 g/cc.

6. A heat shrinkable film as set forth in claim 2, wherein said other thermoplastic homopolymer or copolymer is a copolymer of ethylene and a second comonomer selected from the group consisting of vinyl acetate, alkyl acrylate, carbon monoxide, butadiene, styrene, acrylic acid, and a metal neutralized salt of an acrylic acid.

7. A heat shrinkable film as set forth in claim 2, wherein said thermoplastic homopolymer or copolymer is a homopolymer of an alpha-olefin.

8. A heat shrinkable film as set forth in claim 1, wherein said copolymer is a copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms.

9. A heat shrinkable thermoplastic film as set forth in claim 8 wherein said homogeneous copolymer is a copolymer of ethylene and butene.

10. A heat shrinkable film as set forth in claim 8 wherein said homogeneous copolymer is a copolymer of ethylene and hexene.

11. A heat shrinkable film as set forth in claim 8 wherein said homogeneous copolymer is a copolymer of ethylene and octene.

12. A heat shrinkable film as set forth in claim 1, wherein said film is a multilayer film and said homogeneous copolymer is present in at least one layer of said multilayer film.

13. A heat shrinkable film as set forth in claim 12, wherein said homogeneous copolymer is present in an outer layer.

14. A heat shrinkable film as set forth in claim 13, wherein said outer layer is a heat sealing layer.

15. A heat shrinkable film as set forth in claim 12, wherein said homogeneous copolymer is present in an inner layer.

16. A heat shrinkable film having a substantially symmetrical structure comprising:

outer layers comprising a propylene homopolymer or copolymer; and

Sub A3
17. a core layer comprising a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from four to eight carbon atoms.

A heat shrinkable film as set forth in claim 16, wherein said propylene homopolymer or copolymer is a copolymer of from about 100 % to about 90 % by weight of propylene and from about 0 % to about 10 % by weight of ethylene.

18. A heat shrinkable multilayer film comprising:

· a heat sealing layer;

an inner layer comprising a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms, said copolymer having a density of at least about 0.90 g/cc; and

a barrier layer.

19. A heat shrinkable multilayer film as set forth in claim 18, wherein said barrier layer comprises a copolymer of vinylidene chloride and methyl acrylate.

20. A heat shrinkable multilayer film as set forth in claim 18, wherein said barrier layer comprises a copolymer of vinylidene chloride and vinyl chloride.

Sub A4
21. A heat shrinkable multilayer film as set forth in claim 18, wherein said barrier layer is an ethylene vinyl alcohol.

22. A heat shrinkable multilayer film as set forth in claim 18, wherein said barrier layer comprises a nylon.

23. A heat shrinkable multilayer film as set forth in claim 18, wherein said heat sealing layer comprises a copolymer of ethylene and a comonomer selected from the group consisting of vinyl acetate, alkyl acrylate, acrylic acid, and a metal neutralized salt of an acrylic acid.

24. A heat shrinkable multilayer film as set forth in claim 18, wherein said heat sealing layer comprises a heterogeneous copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms.

25. A heat shrinkable multilayer film as set forth in claim 18, wherein said heat sealing layer comprises a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms.

Subplot 26. A heat shrinkable multilayer film as set forth in claim 18 further including an outer abuse layer.

27. A heat shrinkable multilayer film as set forth in claim 18 further including at least one inner adhesive layer.

Subplot 28. A heat shrinkable multilayer film comprising:

a heat sealing layer comprising a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms, said copolymer having a density of at least about 0.90 g/cc; and

a barrier layer.

29. A heat shrinkable multilayer film as set forth in claim 28, wherein said barrier layer comprises a copolymer of vinylidene chloride and methyl acrylate.

30. A heat shrinkable multilayer film as set forth in claim 28, wherein said barrier layer comprises a copolymer of vinylidene chloride and vinyl chloride.

Subpt 31. ~~A heat shrinkable multilayer film as set forth in claim 28, wherein said barrier layer is an ethylene vinyl alcohol.~~

32. A heat shrinkable multilayer film as set forth in claim 28, wherein said barrier layer comprises a nylon.

Subpt 33. ~~A heat shrinkable multilayer film as set forth in claim 28, including an outer abuse layer.~~

34. A heat shrinkable multilayer film as set forth in claim 28, further including at least one inner adhesive layer.

Subpt 35. A heat shrinkable film comprising at least two layers wherein at least one of said layers comprises a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms, said copolymer having a density of at least about 0.90 g/cc and wherein at least one of said layers is crosslinked.

36. A heat shrinkable multilayer film having a substantially symmetrical structure comprising:

outer layers comprising a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms, said copolymer having a density of at least about 0.90 g/cc; and

an inner core layer.

Subj. cont.

7. A heat shrinkable multilayer film as set forth in claim 36, wherein said inner core layer comprises a copolymer of ethylene and a second comonomer selected from the group consisting of vinyl acetate, alkyl acrylate, acrylic acid, and a metal neutralized salt of an acrylic acid.

8. A heat shrinkable multilayer film as set forth in claim 36 further including two substantially *identical* inner layers immediately adjacent opposed surfaces of said inner core layer.

9. A heat shrinkable multilayer film as set forth in claim 38, wherein said inner layers comprises a heterogeneous copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms.

10. A heat shrinkable multilayer film as set forth in claim 38, wherein said inner layers comprise a homogeneous single site catalyzed copolymer of ethylene and an alpha-olefin having from three to eight carbon atoms.

11. A heat shrinkable multilayer film as set forth in claim 36, wherein said outer layers further include at least one heterogeneous copolymer of ethylene and an alpha-olefin having from three to ten carbon atoms.